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**ACHIEVEMENT MOTIVATION IN ATHLETES:
TASK VERSUS EGO INVOLVEMENT**

by

Dion G. Goodland

B.Sc.H Acadia University, 1992

A Thesis
Submitted to the Faculty of Graduate Studies
through the Department of Psychology
in Partial Fulfilment of the
Requirements for the Degree
of Master of Arts at the
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APPENDIX

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Abstract

Twenty-five (14 males and 11 females) Varsity track and field athletes and 38 (27 males and 11 females) Intramural athletes completed the Sport Orientation Questionnaire (SOQ) and the Competitive Orientation Inventory (COI) to measure differences in their Task Involvement and Ego Involvement. As well, the athletes' overall level of achievement motivation was measured. It was predicted that Varsity athletes and Intramural athletes would differ with respect to their overall level of achievement motivation, their level of Task Involvement, and their level of Ego Involvement. The results indicated that the two groups differed with respect to their overall level of achievement motivation but did not differ in their level of Task Involvement or their level of Ego Involvement. These results were discussed in relation to Nicholls's (1984) theory of achievement motivation. The present study questioned the effectiveness of the SOQ to measure Task Involvement. Possible explanations for the inconsistencies between the results of the present investigation and Nicholls's theory of achievement motivation were discussed.

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TABLE OF CONTENTS

	Page
ABSTRACT	iv
ACKNOWLEDGEMENTS	v
LIST OF TABLES	vii
 Chapter	
I INTRODUCTION	1
Personality Theories in Sport Psychology	2
Personality Variables Studied in Sport Psychology	7
Achievement Motivation in Sport Psychology	10
Theories of Achievement Motivation in Sport	12
Nicholls' Theory of Achievement Motivation	14
Problems with Sport Psychology Research	22
The Present Study	24
Hypotheses	27
 II METHOD	 29
Participants	29
Measures	30
Procedure	33
 III RESULTS	 34
Analyses of Variance	34
Deleting an Item from SOQGOAL	35
 IV DISCUSSION	 44
Task Involvement	44
Ego Involvement	49
Competitiveness	51
Support for Nicholls's (1984) Theory	54
Limitations of the Present Study and Implications for Future Research	56
 APPENDIX	
A Questionnaire Package	60
B List of Items Comprising the Scales of the Sport Orientation Questionnaire	66
C Scoring Procedure for the COI	67
REFERENCES	69
 VITA AUCTORIS	 75

TABLE	LIST OF TABLES	PAGE
1	ANOVA Table for Competitive Orientation Inventory	36
2	Cell Means for COI	36
3	ANOVA Table for SOQ Goal Orientation Scale	37
4	Cell Means for SOQGOAL	37
5	ANOVA Table for SOQ Win Orientation Scale	38
6	Cell Means for SOQWIN	38
7	ANOVA Table for SOQ Competitiveness Scale	39
8	Cell Means for SOQCOMP	39
9	Pearson r Correlation Coefficients for the Items of SOQGOAL	40
10	Alpha levels for the SOQ Goal Orientation Scale when Items are Deleted	41
11	ANOVA Table for SOQ Goal Orientation Scale with Item 8 Omitted	43
12	Cell Means for SOQGOAL with Item 8 Omitted	43

CHAPTER I

INTRODUCTION

As sport psychology has emerged as a separate discipline, it has undergone many changes with respect to research techniques, theoretical paradigms, and variables that have been studied. Vealey (1989) notes that the study of personality was perhaps the first area to emerge within the field of sport psychology and to receive "systematic attention." Much of the early research involving personality looked to discover the ideal athletic personality.

Although personality research began early within the development of sport psychology, Feltz (1992) indicates that even after hundreds of investigations focusing on numerous personality variables have been reported in the literature, few widely accepted answers have emerged. Several possible explanations for this inconclusive body of literature have been posed. For example, Furnham (1990) and Gill (1986) suggest that sport personality research has been plagued with methodological problems and theoretical inconsistencies that have limited the credibility of findings. After reviewing the literature, Feltz (1992) notes that some writers within the discipline feel that research has been interrupted due to the lack of a paradigm that is acceptable to contributors in the field.

The present study reviews some of the theoretical perspectives that have influenced research in sport psychology as it has evolved as a science, as well as several personality variables that have been reported in the literature. Special attention is given to the personality characteristic, achievement motivation, as the present study attempts to extend the utility of Nicholls's (1984) theory of achievement motivation within the athletic domain. Additionally, the current investigation attempts to effectively address and overcome several of the weaknesses that have reportedly plagued sport psychology research.

The following section presents a brief overview of the theoretical perspectives that sport psychology researchers have used to develop models of personality, as well as to drive research in the area. Morgan (1980) notes that developments and trends in sport psychology have been quite similar to trends in mainstream psychology. These close ties are evident in the theories that are presented in the following section, as the theories applied in sport psychology closely parallel those that were popular in mainstream psychology.

Personality Theories in Sport Psychology

Following the personality theories of mainstream psychology, research in sport psychology (i.e., the study of personality in sport psychology) has used many approaches to explain variations in personality variables found in

athletes. These theories have ranged from biological theories to deterministic approaches (including psychoanalytic theories) to trait theories and, finally, to interactionistic perspectives. Each of these theoretical approaches has had varying degrees of utility in sport psychology.

Gill (1986) summarizes some of these theoretical approaches to personality research in sport. She suggests that one of the earlier, and more popular, of the biological approaches was Sheldon's constitutional theory (Sheldon & Stevens, 1942; cited in Gill, 1986). Sheldon's theory links one's somatotype, or body build, to a set of distinct personality traits. For example, an endomorphic, or round, body type is often associated with sociability, relaxation, and affection; ectomorphic, or thin, body type is characterized by introversion, tenseness, and intellectual types; and mesomorphic, or muscular, body type is often seen as the ideal athletic build, possessing personality characteristics such as aggressiveness and risk-taking (Gill, 1986). The constitutional approach to personality receives little systematic attention in contemporary psychology and sport psychology (Gill, 1986). Gill concludes her discussion of biological theories in sport psychology by noting that, in contemporary sport psychology, this approach is not often used in personality research. Biological theories remain in sport psychology research,

however, as a possible explanation of how moods are affected by exercise as well as how exercise impacts on an individual's psychological health.

Silva (1984) discusses the deterministic approach to personality and how it has influenced research in sport psychology. Silva indicates that this approach "maintain[s] that behaviour is determined for an individual rather than by an individual" (p. 62). He adds that most of the theories subsumed under the title of deterministic, for example psychoanalysis, assume that subconscious processes regulate behaviour and that personality characteristics were developed as a result of resolved unconscious psychic conflict early in the individual's life. Silva notes that this perspective has not answered many of the main personality questions that exist in sport psychology. One explanation offered by Silva is that the theories do not offer "specific and testable hypotheses relevant to sport" (p. 62). He notes that some psychologists maintain that these models can "explain all but predict nothing (a post hoc theory)" (p. 63). Gill (1986) offers similar comments on these theories, indicating that they have had limited impact on the field of sport psychology. She states that they offer few testable hypotheses, especially about normal or healthy personality profiles (Gill, 1986). This is problematic in that "the main issue for sport psychology is the relationship between personality characteristics and

behaviours in typical, 'normal' sport settings" (Gill, 1986, p. 26).

Silva (1984) notes that even though deterministic approaches have limitations, they have had some impact on sport personology. He states that some researchers have argued a "gravitational model" where individuals with specific personality profiles tend to participate in certain sports. This argument was met with criticism as research indicated that members of a sport do not have a homogeneous personality profile (Silva, 1984).

As an alternative to the qualitative descriptions of the deterministic approach, some psychologists have adopted the trait perspective of personality (Silva, 1984). A major premise of this group of theories is the consistency and generalizability of behaviours and thus, traits are good predictors of behaviour across situations (Gill, 1986; Silva, 1984). Gill (1986) states that there is evidence that traits are, in fact, poor predictors of future behaviour. Many of the measures used in sport personality research, for example, the Cattell 16 Personality Factors Questionnaire (Cattell 16PF), are based on the assumptions of trait theories. Gill (1986) suggests that much of personality research in sport psychology is the result of studies of investigators applying this approach. Silva (1984) notes that the results of studies utilizing this approach is a substantial mass of research that is riddled

with inconsistencies.

Because of this confusion, as well as other problems (see Silva, 1984) with the trait approach to personality, psychologists have turned to an interactional approach (Gill, 1986; Silva, 1984). Silva (1984) writes that this approach differs from the trait approach in that it emphasizes the effects situations have on behaviour. Because this approach allows for some personal differences and some inconsistent behaviours from situation to situation, many sport-specific models have emerged. Silva continues by noting that several sport psychologists have used this model in sport psychology research. One research area presented by Silva is state versus trait testing of athletes. In these studies athletes are tested before and during competitions to determine if their level of competition (state) is in accordance with their trait profiles. This allows the researcher to compare the effects of the situation and the athlete's personality on his or her behaviour.

In her review of the literature, Feltz (1992) notes that several contributors to the field of sport personality research have indicated that what is studied is directly influenced by the zeitgeist that exists at the time. The following review, while not exhaustive, provides a range of the personality variables that have been the focus of research as the favoured theoretical perspective as

undergone change.

Personality Variables Studied in Sport Psychology

Gill (1986) notes that the earliest personality characteristics of athletes were reported by Griffith (1926, 1928; cited in Gill, 1986). The characteristics presented by Griffith included ruggedness, intelligence, optimism, and alertness. These traits were derived from personal observations of professional baseball players rather than through an empirical investigation. Simple observations, such as the approach used by Griffith, have generally been replaced by empirical research as sport psychology has progressed as a science.

One of the earliest and most substantial findings based on rigorous scientific methodology was that presented by W.P. Morgan (1980). In Morgan's investigation, athletes from several sports, both team and individual, completed the Profile of Mood States (POMS). The resulting profile (based on the POMS) for successful athletes indicated scores on vigour that were higher than the norms reported for the POMS and scores on tension, depression, anger, fatigue, and confusion that were lower than scores reported by the normative population. The profile obtained by joining the points of the distribution resembled that of an iceberg, with vigour being above the waterline (i.e., higher than the norms) and the remaining descriptors below the waterline (i.e., lower than the norms). As a result, it has been

referred to as the "iceberg profile" (Morgan, 1980).

Mahoney (1989) included the POMS with several other self-report inventories in a study of psychological predictors among Olympic weightlifters. He compared scores of successful (finishing in the top three) and unsuccessful lifters. Although he did not find a perfect match with the iceberg profile, Mahoney indicated that the profiles of his participants were not significantly different from that reported by Morgan. The iceberg profile also emerged in other studies, including those by Morgan, O'Connor, Ellickson, and Bradley (1988) who assessed elite male distance runners and Morgan, O'Connor, Sparling, and Pate (1987) who assessed female distance runners.

Gill (1986) warns that even though Morgan and his colleagues' findings are based on sound research, some cautions should be taken. Gill indicates that Morgan's explanation is very general and notes that the iceberg profile has been reported for unsuccessful athletes while the profiles of successful athletes do not resemble that reported by Morgan. She points to the possibility that elevated levels of depression, anger, confusion, fatigue, and tension are negatively related to success in most domains, not only in sport performance. Thus, it is not surprising that those athletes who have been classified by Morgan as being successful possess lower levels of these traits than do members of the normative sample. Finally,

Gill states that Morgan's most substantial findings come from the use of a measure of moods, rather than a measure of more stable personality traits. The ability of a measure of mood states to evaluate personality characteristics is questionable and his results should be considered with this limitation in mind.

Other personality variables have been the focus of research in sport psychology. Frazier (1987) looked at the introversion-extroversion construct using elite and nonelite distance runners. The runners were grouped according to race performances (times lower than an accepted cutoff in the sport were considered elite) and were asked to complete the Eysenck Personality Inventory (EPI). Frazier reported that these runners did not vary significantly from the population norms on the traits that were measured by this inventory.

Garland and Barry (1990) had 272 collegiate football players complete the Cattell Sixteen Personality Factor Questionnaire (16PF). The players were grouped into three categories, based on differences in athletic ability. The investigators found that four of the sixteen factors, specifically, tough-mindedness, group-dependence, extraversion, and emotional stability, were significant contributors to performance in collegiate football. Scores on these traits coincided with performance levels - high scores were associated with football players classified as

having greatest level of success.

Gondola and Wughalter (1991) extended the use of the 16PF in an investigation of female tennis players. The authors found that when the athletes were grouped according to age, younger players appeared to be more intelligent and more conservative while the older athletes seemed to be more radical and experimental (Gondola & Wughalter, 1991). When compared on the basis of their ranking on the tennis circuit, the investigators found no differences between the groups.

As was noted previously, this review of personality traits that have been the focus of research in sport psychology has not been exhaustive. The traits that have been discussed were chosen to provide a sense of traits that have been investigated. In addition to these, sport psychology research has given much attention to achievement motivation. The following section focuses on research that has studied achievement motivation. Additionally, the section reviews theories of achievement motivation that have been applied in sport research.

Achievement Motivation in Sport Psychology

The personality characteristic, achievement motivation, has received extensive research attention in both sport psychology and mainstream psychology. Gill (1986) indicates that the construct of achievement motivation and the vast amount of research involving this trait provides conclusions

that can be applied to the athletic domain. Gill relates the construct of achievement motivation to competitiveness in sport, stating that "competitiveness is a sport-specific form of achievement motivation, and sport psychologists generally agree that competitiveness develops from achievement motivation" (p. 59). Similarly, Silva (1984) suggests that "sport competition can usually be classified as an achievement setting" (p. 174).

Balazs and Nickerson (1976), using Murray's theory of needs approach to personality, administered a personality questionnaire, the Edwards Personal Preference Schedule, to twenty-four Olympic female athletes. Results suggested that this group of athletes had a high need for achievement and a high need for autonomy. According to the investigators, high need for achievement "suggests a person with a strong desire to do well, who likes to do her best, to accomplish tasks that require effort and skill" (p. 47). Gravelle, Searle, and St. Jean (1982) report similar findings in their study of the Canadian national female volleyball team. Members on the team, again based on the Edwards Personal Preference Schedule, reported a high need for achievement.

Watson (1986) studied personality characteristics of national-level hockey players in Australia. He used several measures to determine the athletes' levels of achievement motivation and anxiety. His findings indicate that compared with population norms, athletes score higher in achievement

motivation. In a sample of elite wrestlers (Hardy & Silva, 1986), a personality profile indicating assertiveness, determination, adventurousness, self-assurance, and control was interpreted to indicate "that success is something that these athletes desire rather than fear and therefore strive to achieve, perhaps at all costs" (p. 209).

Again, this is not an exhaustive review of the sport literature involving achievement motivation. As well, while several theoretical perspectives have been used to explain achievement motivation in sport psychology, it is important to note that the studies previously cited generally did not adhere to any of these perspectives.

Theories of Achievement Motivation in Sport. Several sources review the theoretical approaches historically taken in sport psychology research on personality, and more specifically, achievement motivation (Duda, 1989; Gill, 1986; Roberts, 1982). Roberts (1982) notes that the earliest, and perhaps the most influential, research approach was that of Atkinson (1964, 1974; cited in Roberts, 1982). Based heavily on Murray's theory of needs, Atkinson's approach attempts to:

account for the achievement behaviour of individuals in situations where the individual believes his or her behaviour will be evaluated against some criterion of excellence. It is assumed that any situation that challenges an individual to achieve by arousing an expectancy of future success must also pose the possibility of failure (p. 239).

This results in a conflict between the tendency to achieve

success and the tendency to avoid failure, that is, focus on winning and focus on not losing. Based on this theory, achievement motivation for high achievers is exhibited in behaviours that are focused on being successful, that is, attaining a positive goal. On the other hand, low achievers display achievement motivation in behaviours used to avoid failure, that is, avoid a negative outcome. High achievers choose challenging situations in which the outcome is uncertain; there is equal probability of success and failure. Low achievers tend to seek situations that will result in certain success or certain failure (Gill, 1986).

Atkinson's achievement motivation theory states that high achievers tend to exert intense effort during these challenging situations and will continue to do so as long as a chance of success is perceived by the individual. In contrast, low achievers tend to be more anxious and inhibited in achievement situations and seem to be inclined to cease effort during challenging situations (Gill, 1986; Roberts, 1982).

The relationship between achievement motivation and sports performance is presently equivocal. Many individuals in the sport domain believe that achievement motivation is not simply a unidimensional concept as proposed by Atkinson's model (e.g., Gill & Deeter, 1988; Nicholls, 1984). For example, Gill and Deeter (1988) note that Atkinson's model focuses on unidimensional achievement

motives and that tests that measure his constructs may be too broad in scope to effectively predict specific achievement orientations. As well, Gill and Deeter acknowledge that while the field of sport psychology does not have a generally accepted construct of sport achievement, it is commonly accepted that there are at least two dimensions of achievement orientation within the context of sport and athletics. Because of this lack of a widely accepted theoretical position, several approaches have been presented. In a summary of some of these theories, Roberts (1982) includes the following: Hill's Test-Anxiety approach and Crandall's social learning approach. Another perspective that has been introduced to the sport literature is Nicholls's attributional approach. Of particular interest to the present investigation is that of Nicholls (1984).

Nicholls's Theory of Achievement Motivation

In his approach to achievement motivation, Nicholls (1984) notes that the major goal of achievement behaviours is to demonstrate competence. In reference to Nicholls, Duda (1989) writes that "the primary focus in achievement situations is to establish oneself as having high ability and avoid the implication of low ability" (p. 85). Nicholls suggests that individuals can display competence or high ability in at least two ways. The first he termed Task Involvement. Individuals with this approach to achievement

motivation focus on improving their ability at a given task. The improvements are judged with positive regard by the person if they meet levels that have been established by the individual. For a Task Involved person, goals are based on previous personal performances; performance is believed to have improved if it is better than existing personal bests. Perception of competence does not require that a performance be judged against that of another or to some other external criterion. For example, a sprinter with a Task Involved orientation to achievement motivation will perceive himself or herself as displaying competence and high ability if he or she continues to decrease running times during training sessions and competitions.

Nicholls (1984) also states that a person with Task Involvement can display high ability and competence in other ways. First, he suggests that if a task is deemed by the individual as being difficult and that failure may be a realistic outcome, then success indicates high ability. Displaying high ability leads to perceived competence. Furthermore, Nicholls notes that because effort is required to learn or improve on a task, then the greater the effort needed to satisfy personal standards, the higher the perceived ability and, again, perceived competency.

The second conception of ability proposed by Nicholls's (1984) theory of achievement motivation is Ego Involvement. For an individual with this conception, ability is based on

comparisons with the abilities of members of a reference group. The Ego Involved individual sees himself or herself as displaying high ability if his or her performance on a task is better than the average performance of the members of the comparison group. Similarly, if the Ego Involved person perceives a performance that is below that of the reference group, then it is perceived as a display of low ability. Like Task Involvement, Ego Involvement relies on the perception of high ability for the displaying of competence.

As well, an Ego Involved individual will perceive low ability if he or she requires more time and effort to master a task than do members of a comparison group. Ego Involved individuals are less concerned with improving performances with respect to previous personal showings. Thus, it is possible for an individual with such an approach to achievement motivation to have a significant improvement in personal performance but not perceive himself or herself as having displayed high ability if he or she does not perform better than others involved with the same task. For example, if a sprinter has an Ego Involved approach to achievement motivation, then his or her focus would primarily be on defeating the rest of the field during competition and other teammates during training. Improving on personal bests would not result in perception of high ability if the sprinter finishes lower than first place.

Without displaying high ability, the individual does not perceive competence.

Nicholls (1984) proposes that an athlete's goal orientation will influence his or her achievement motivation and subsequent behaviours. Stronger orientation toward Task Involvement is likely to elicit (a) choosing achievement situations of moderate difficulty, (b) exerting of maximal effort, and (c) performing up to one's ability. Duda (1989), in her discussion of Nicholls's theoretical position, suggests that because "success means trying hard to reach personal performance standards" (p. 86), Task Involvement should enhance an athlete's perception of his or her competency. Such an approach to achievement situations would conceivably lead to more experiences of success because the individual has control of the desired level of performance.

Nicholls sees Ego Involvement as a likely precursor of maladaptive achievement behaviours. A person high in Ego Involvement is likely to select situations that are extremely easy or extremely difficult. Thus, in easy situations, the person enhances the chance of succeeding and displaying competency. On the other hand, by choosing an extremely difficult situation, the person can rationalize not winning by suggesting that the situation was beyond his or her ability and, therefore, he or she was not supposed to do well. Also, should the individual unexpectedly succeed

in this difficult situation, then he or she would display high competency. As well, such athletes are likely to produce an effort that is below the individual's ability in order to protect against the possibility of not equalling or bettering another's performance. Again, this would provide the individual with an explanation of why he or she did not succeed (i.e., "I did not win because I did not try hard."). This is similar to those behaviours described by Atkinson to be common to individuals with low achievement motivation.

Nicholls's (1984) theory of achievement motivation has been applied in several research settings, such as school environments (e.g., Duda & Nicholls, 1992; Jagacinski & Nicholls, 1987), and athletic environments (Burton & Martens, 1986; Duda, 1987; Jackson & Roberts, 1992; Wankel & Sefton, 1989).

Jackson and Roberts (1992) applied the theory in their investigation of the relationships of several variables that they felt to be associated with athletes' peak performance. The authors write, "peak performance is a state of superior functioning that characterizes optimal sport performances, resulting in personal bests and outstanding achievements" (p. 156). They suggested that people with Task Involvement would focus their attention "on the process of the performance rather than on the outcome, and these characteristics are associated with the perception of peak performance" (p. 159). Thus, these investigators are

implying that being Task Involved is an important component for an athlete to have optimal performances. As well, they note that Ego Involvement "may hinder an athlete from attaining the necessary psychological state for peak performance to occur" (p. 159). Jackson and Roberts (1992) continue, stating that during athletic performances:

athletes may be distracted by how they are performing relative to others and may focus upon the anticipated outcome of their performance. When performing poorly, it is likely that athletes are more distracted about the outcome (p. 159).

To summarize their findings involving 200 collegiate athletes from several sports, the authors noted that better performances and higher perceived ability were associated with Task Involvement while Ego Involvement was most often related to the athletes' worst performances. Thus, based on these results and in terms of superior performances the following paradox exists: "Superior behaviour may be harder to achieve when one is focused on trying to achieve it" (Jackson & Roberts, 1992, p. 169).

Similarly, Burton and Martens (1986) used Nicholls's (1984) approach in their study of young wrestlers. Burton and Martens were investigating reasons why young athletes drop out of sport. Unlike Jackson and Roberts (1992), however, Burton and Martens (1986) focus their attention on Ego Involvement. They indicate that continued involvement in sport will be more likely if young athletes have more consistently achieved success (i.e., have won more

contests). From this success, these athletes can infer high ability. The opposite is also true in that those athletes with low winning percentages are more likely to drop out of sport because they will feel inadequate in sport and will seek to meet their achievement needs elsewhere. To test their hypotheses, Burton and Martens had their sample complete questionnaires that recorded demographic information, attitudes toward the wrestling federation and attitudes toward extrinsic rewards. The authors also included a questionnaire that assessed reasons why kids stopped participation in wrestling and questions that assessed the athletes' perceptions of their ability. Burton and Martens found that athletes drop out of wrestling only when they can no longer infer high ability. Based on this finding, Burton and Martens refer to Nicholls (1984) and suggest that coaches emphasize to their athletes a performance orientation. That is, coaches should encourage young athletes to focus their attention on their performances and on mastering the sport rather than on winning all contests. To use Nicholls's terminology, coaches should foster the development of Task Involvement in their young athletes.

Wankel and Sefton (1989) applied Nicholls's (1984) theory of achievement motivation in their study of children's motivation in sport. Their sample consisted of 55 girls who were playing ringette and 67 boys who were

playing hockey. The authors concluded, based on data from several questionnaires, that for the young athletes, these sports represent an achievement context. Also, Wankel and Sefton write that fun is dependent on the perception of a skilled performance and demonstration of ability. The authors continue by stating that the study indicates that the young athletes put greater emphasis on mastery goals (i.e., appear to place more emphasis on Task Involvement) than on ego goals when discussing fun.

The studies cited in the preceding paragraphs (e.g., Burton & Martens, 1986; Jackson & Roberts, 1992; Wankel & Sefton, 1989) suggest that, although Nicholls's (1984) theory of achievement motivation was originally developed within the context of educational psychology, it can be useful to explain achievement motivation within the context of sports. Gill (1986) writes that competitiveness is a "sport-specific form of achievement motivation, and sport psychologists generally agree that competitiveness develops from achievement motivation" (p. 59). With reference to existing research, Duda (1989) notes "that the athletic domain, in particular, has been deemed a most appropriate context in which to test theories of achievement motivation specifically" (p. 84). With this in mind, the present study attempts to provide further examines the utility of Nicholls' (1984) theory of achievement motivation in the athletic realm. This examination has been conducted while

considering, and attempting to effectively deal with, problems with sport psychology research that have been reported in the literature.

Problems with Sport Psychology Research

Although sport psychology research is empirically based, several reports indicate that the standard of research in sport psychology has been poor (e.g., Furnham, 1990; Gill, 1986). Furnham (1990) lists several commonly mentioned factors, including poor measurement of variables; poor sampling of subjects; and poor or nonexistent theoretical grounding. Similarly, Gill (1986) summarizes the problems in sport psychology research in terms of conceptual ("problems in the basic theory or reasoning underlying a study" (p. 33)), methodological (e.g., using inappropriate samples and measures), and interpretive (e.g., interpreting a correlational study as cause-and-effect).

Examples of research that does not adequately or effectively use a theoretical perspective are easily found in the literature. The current author notes that many of the studies cited previously (e.g., Balazs & Nickerson, 1976; Frazier, 1987; Gravelle et al., 1982; Hardy & Silva, 1986; Morgan et al., 1988; Morgan et al., 1987) have little grounding in theory. Feltz (1992) describes this approach as being of a "shotgun variety" (p. 6) because the investigators generally do not have any theoretical rationale for performing the study or for utilizing the

personality tests that they have selected. For example, a researcher might "gain access to a sample of athletes (from high school to Olympic calibre) and test them on the most convenient personality test" (Feltz, 1992, p. 6). Feltz continues, noting that "[f]ew conclusive answers resulted from hundreds of studies conducted using this approach" (p. 6). Thus, it appears that approaching research in such a manner may result in many bits of knowledge that are not related in a uniform, cohesive manner.

Methodological weaknesses can be identified by focusing on measures that have been used in research projects that have been presented previously. For example, the personality inventories that have been used in much sport psychology literature consider an individual's overall personality structure. For example, the POMS (Mahoney, 1989; Morgan, 1980; Morgan et al., 1988), the 16PF (Garland & Barry, 1990; Gondola & Wughalter, 1991), and the EPI (Frazier, 1987) are measures that are commonly used in research. It is possible that these measures are not sensitive enough to detect group differences on specific variables of interest and these variables would be better evaluated using more sensitive measures with a more specific focus. Keeping these limitations in mind, the following section discusses how the present study attempts to deal with the issues while examining Nicholls's (1984) theory.

The Present Study

The present study has two primary purposes. First, the present study attempts to extend the utility of Nicholls's (1984) theory of achievement motivation within the athletic domain. Many of the investigations that have been previously cited (e.g., Burton & Martens, 1986; Duda, 1987; Wankel & Sefton, 1989) apply this theoretical perspective to youth sports. However, few studies (e.g., Jackson & Roberts, 1992) have applied this approach to older athletes. The present study compares two groups of athletes comprised of university students.

The second purpose of the present study is to address some of the concerns that have been reported in sport psychology literature. The present study utilizes Nicholls's (1984) theory of achievement motivation in an attempt to develop a theory-driven study in the athletic domain. Accordingly, the hypotheses have been derived based on Nicholls's concepts of Task Involvement and Ego Involvement. As well, the scales that have been selected to measure these concepts have been chosen because they have been shown to possess sound psychometric properties and scales that have been directly related to Nicholls's theoretical perspective. The present study addresses the weaknesses presented by Furnham (1990) in the following manner: the present study applies Nicholls's theory to all aspects of the investigation; the instruments that have been

chosen have been linked to the concepts put forth by the theory, and the samples chosen have been selected to provide conditions required to best examine the utility of the theory with university-aged athletes. These purposes have led to the following specifics.

First, the current investigation utilizes the Sport Orientation Questionnaire (SOQ; Gill & Deeter, 1988) and the Competitive Orientation Inventory (COI; Vealey, 1986). As has already been stated, it has been shown that these measures have sound psychometric properties (Gill & Deeter, 1988; Vealey, 1986, 1988) and contain scales that have been directly related to Nicholls's concepts of Task Involvement and Ego Involvement (Duda, 1989).

Second, for the present study, achievement motivation is defined as the "desire or will to achieve based on some standard of excellence" (Bostian & Gardner, 1981, p. 205). Applying this definition within the context of Nicholls's (1984) theory, the standard of excellence may be personal (as is the case with Task Involvement) or externally based (as is the case for Ego Involvement). This investigation measures athletes' level of general achievement motivation with the SOQ Competitiveness scale. Duda (1989) links the SOQ scale of Goal Orientation to Nicholls's concept of Task Involvement and the SOQ Win Orientation scale to Ego Involvement. Based on the connection explained by Duda (1989), as well as on the definitions of the SOQ scales

provided by Gill and Deeter (1988), the present study measures the athlete's level of Task Involvement with their scores on the SOQ Goal Orientation scale and measures their level of Ego Involvement with their scores on the SOQ Win Orientation scale.

Martin and Gill (1991), in their study of male distance runners, note that the SOQ and the COI appear to measure different aspects of achievement orientation. They make this conclusion based on their finding of nonsignificant correlations between the two scales within their sample. Martin and Gill explain why they used both measures, noting that:

the SOQ allows athletes to hold both win and goal orientations independently whereas the COI forces athletes to choose between an outcome and a performance orientation (p. 151).

Similarly, Gill, Kelley, Martin, and Caruso (1991) state that the measures may be useful when used simultaneously. As a result, the present study used both scales and uses the COI score as a second measure of the athletes' level of Task Involvement.

Finally, this investigation compares two groups of university athletes with respect to their levels of Task Involvement and Ego Involvement. One group of athletes consists of Varsity track and field athletes who had reached the minimal requirements to participate at the national university track and field competitions. This is often regarded as a high level of performance in Canadian

university athletics. The second group contains Intramural athletes who were participating in Campus recreation athletic competitions. These athletes were asked if they had ever participated on a team at the varsity level or on a community-based all-star team. By asking this question, the investigator attempted to control the ability level of those athletes comprising this group in a manner similar to that used by Martindale, Devlin, and Vyse (1990). Based on Nicholls's perspective, the two groups are expected to differ with respect to their achievement orientation. Specifically, it is predicted that Varsity athletes are more Task Involved and Intramural athletes are more Ego Involved because Nicholls's argues that Task Involved athletes exhibit behaviours that are more conducive to maximum performance while Ego Involved athletes tend to display behaviours that make maximum potential more difficult to attain.

Hypotheses

The preceding paragraphs have outlined the purposes of the present study as well as the predictions that have been derived from Nicholls's (1984) theory and existing literature. This section presents the specific hypotheses:

1. Varsity athletes will score higher than Intramural athletes on the SOQ Goal Orientation scale and the Performance scale of the COI (i.e., Varsity athletes will be more Task Involved than Intramural athletes).

2. Intramural athletes will score higher than Varsity athletes on the SOQ Win Orientation scale (i.e., Intramural athletes will be more Ego Involved than Varsity athletes).
3. Varsity athletes will score higher than Intramural athletes on the SOQ Competitiveness scale (i.e., Varsity athletes will more competitive than Intramural athletes).

CHAPTER II

METHOD

Participants

The study included two groups of athletes. The first group consisted of 25 members (14 males, 11 females) of the Varsity Track and Field team of the University of Windsor who had met the minimal requirements for competition at the Canadian university national championships. Two other athletes met the criterion but the investigator was unable to recruit them. The average age of the athletes comprising this group was 21.9 years (males = 21.7 (s.d. = 1.9), females = 22.1 (s.d. = 1.8)). This group of athletes was contacted to participate in the present study with the assistance of the coaching staff. These individuals were selected because this is a nationally accepted level of excellence and these athletes are typically perceived as elite within Canadian university athletics.

The second group of athletes consisted of 38 (27 males, 11 females) Intramural athletes who had competed in sports programs sponsored by the Campus Recreation Department at the University of Windsor. The average age of this group of athletes was 22.0 years (males = 22.1 (s.d. = 1.9) , females = 21.5 (s.d. = 2.6)). These athletes were screened to exclude athletes who participated at a Varsity level or at a community all-star level in any sport. This procedure attempted to differentiate these athletes from the elite

athletes with respect to athletic ability. 50 athletes were approached by the experimenter during intramural athletic events and were asked to complete the questionnaire package (see Appendix A); 38 complied.

Measures

Sport Orientation Questionnaire (SOQ; Gill & Deeter, 1988). The SOQ is a 25-item self-report inventory that measures sport achievement orientation. The items are rated on a five-point scale ranging from A ("Strongly Agree") to E ("Strongly Disagree"). It is a multidimensional measure that presents sport achievement orientation in terms of three separate but related factors:

1. Competitiveness Scale represents "a basic sport-specific achievement orientation" (Gill & Deeter, 1988, p. 195). The scale contains 13 items, for example, "I am a determined competitor". Scores on the scale can range from 13 to 65. High scores represent a stronger desire to participate and succeed in sporting competitions.

2. Win Orientation Scale, is "the desire to win in interpersonal competition in sport" (p. 195). This scale has 6 items, including those such as "Winning is important" and scores can range from 6 to 30. High scores indicate a stronger desire to defeat other participants during competition.

3. Goal Orientation Scale, is "the desire to reach personal goals in sport" (p. 195). Like the Win Orientation

Scale, it has 6 items, such as "I set goals for myself when I compete". Scores on the scale can range from 6 to 30. Higher scores represent a stronger orientation towards satisfying personal goals and/ or meeting personal standards of performance in sporting competitions.

Internal consistency values reported by the developers for each of the three scales are .94, .85, and .82 for Competitiveness, Win Orientation, and Goal Orientation, respectively (Gill & Deeter, 1988). Gill and Deeter (1988) report test-retest reliabilities ranging from .73 to .89. As well, the authors report good construct validity for the SOQ. Gill, Dzewaltowski, and Deeter (1988) reported good convergent and divergent validity of the SOQ. Kang, Gill, Acevedo, and Deeter (1990) report good internal consistency and reliability for the SOQ in their investigation of athletes and nonathletes in Taiwan.

Appendix B indicates which items comprise each of the scales of the SOQ. This appendix also shows how scores are calculated for each of the scales.

Competitive Orientation Inventory (COI; Vealey, 1986). The COI was developed to address the performance-outcome distinction (i.e., whether an athlete focuses on his or her performance during competition or on the anticipated outcome of the competition) commonly referenced in sport literature. It was designed so that "athletes would not have to directly choose one orientation over another" (Vealey, 1986, p. 225);

athletes are forced "to weigh the value of both goals [i.e., performance versus outcome] simultaneously" (p. 225). The COI yields a score that represents the athlete's focus on performance (Vealey, 1988). It places outcome and performance orientations at opposing endpoints of the same continuum (Martin & Gill, 1991).

The COI uses a matrix format that consists of sixteen cells that correspond to different possible situations in sport. The rows of the matrix represent different levels of performance (i.e., very good, above average, below average, very poor). The columns of the matrix represent different possible outcomes (i.e., easy win, close win, close loss, and big loss; Vealey, 1986). The cells are representative of combinations of outcomes and performance level. Individuals are required to complete the matrix by assigning a number from 0 to 10 to each cell to rate the situation in terms of satisfaction to the individual. The numbers fall along a continuum with 0 as a very unsatisfactory condition and 10 as a very satisfying situation. High scores represent a performance orientation, meaning that performing well during a competition provides the athlete with more satisfaction than does winning.

Test-retest reliability from one day to one month ranged from .63 to .69 (Vealey, 1986). Although these values are somewhat low, Duda (1989) writes that, like the SOQ, the COI provides "a good starting point and need[s]

additional testing" (p. 108). Vealey (1986) reports good construct and concurrent validity for the COI. Appendix C describes the steps outlined by Vealey (1988) to calculate scores on the COI.

Procedure

The questionnaires were administered by the investigator to the participants. To ensure that all individuals received the same explanation of the procedure, a cover letter was attached to each questionnaire package. Additionally, each person was required to complete a consent form. A copy of the consent form was given to each participant for their own records. All participants were thanked for their cooperation. The questionnaire package is included in Appendix A.

Chapter III

RESULTS

This chapter presents the information obtained from the statistical analyses of the data. The first section compares the two groups of the present sample on the three subscales of the SOQ and the COI in order to determine if there were differences, as hypothesized, between the groups on these measures. Specifically, it was predicted that Varsity athletes would score higher than Intramural athletes on SOQ Competitiveness Scale (SOQCOMP), SOQ Goal Orientation Scale (SOQGOAL), and COI. Additionally, it was predicted that Varsity athletes would score lower than Intramural athletes on SOQ Win Orientation Scale (SOQWIN). To test these predictions, several univariate 2 x 2 (Group x Sex) analyses of variance (ANOVA's) were performed. The final section of this chapter looks at the SOQ Goal Orientation Scale and considers the possibility of omitting an item from the scale.

Analyses of Variance

Data analyses compared the Varsity athletes and the Intramural athletes on each of the four dependent variables. To test each of the hypotheses, univariate 2 x 2 (Group x Sex) ANOVA's were performed for SOQCOMP, SOQWIN, SOQGOAL, and COI.

ANOVA for COI generated a significant main effect for Group, $F(1, 59) = 4.90, p < .05$. On this measure, Intramural

athletes scored higher than did Varsity athletes. A summary of the findings for the ANOVA is located in Table 1. Table 2 shows the cell means for COI. A post-hoc Tukey analysis indicates that there was a significant difference between Groups, with Intramural athletes scoring higher than Varsity athletes.

ANOVA's for SOQGOAL and SOQWIN produced no significant main effects or interactions (see Tables 3 and 5). The cell means can be found in Tables 4 and 6.

Table 7 presents the results of the ANOVA for SOQCOMP. The ANOVA generated a Group x Sex interaction, $F(1, 59) = 4.88$, $p < .05$. While Intramural athletes, as a group, scored lower on SOQCOMP, females in this group scored much lower than their Varsity counterparts.

Deleting an Item from SOQGOAL

As was suggested in an earlier section of this chapter, it appears that the results reported for SOQGOAL had been strongly influenced by the scores for a single item - item 8 ("I am not competitive when I try to achieve personal goals.").

Table 9 shows that this item was not significantly correlated with the other items comprising this scale, supporting the claim that this item had a disproportionate impact on the data for the present sample. Additionally, as was previously reported, the alpha value for SOQGOAL increased from 0.62 to 0.85 with the item deleted. Table 10

Table 1

ANOVA Table for Competitive Orientation Inventory (COI)

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group	0.26	1	0.26	4.90*
Sex	0.02	1	0.02	0.31
Group x Sex	0.03	1	0.03	0.59
Error	3.08	59	0.05	

* $p < .05$.

Table 2

Cell Means for COI

Group	Sex	
	Male	Female
Varsity	0.62 (.20) (N=14)	0.53 (.25) (N=11)
Intramural	0.71 (.23) (N=27)	0.72 (.24) (N=11)

Note. Standard deviations are included in parentheses.

Table 3

ANOVA Table for SOQ Goal Orientation Scale (SOOGOAL)

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group	20.88	1	20.88	1.75
Sex	9.08	1	9.08	0.76
Group x Sex	4.20	1	4.20	0.35
Error	704.24	59	11.94	

Table 4

Cell Means for SOOGOAL

Group	Sex	
	Male	Female
Varsity	25.36 (2.68) (N=14)	25.55 (2.84) (N=11)
Intramural	23.89 (4.07) (N=27)	25.18 (3.16) (N=11)

Note. Standard deviations are included in parentheses.

Table 5

ANOVA Table for SOO Win Orientation Scale (SOOWIN)

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group	3.35	1	3.35	0.11
Sex	70.07	1	70.07	2.31
Group x Sex	26.49	1	26.49	0.87
Error	1787.65	59	30.30	

Table 6

Cell Means for SOOWIN

Group	Sex	
	Male	Female
Varsity	21.14 (6.07) (N=14)	20.45 (6.38) (N=11)
Intramural	21.37 (4.79) (N=27)	17.91 (5.52) (N=11)

Note. Standard deviations are included in parentheses.

Table 7

ANOVA Table for SOO Competitiveness Scale (SOOCOMP)

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group	332.21	1	332.21	7.97
Sex	99.07	1	99.07	2.38
Group x Sex	203.55	1	203.55	4.88*
Error	2459.39	59	41.68	

*p < .05.

Table 8

Cell Means for SOOCOMP

Group	Sex	
	Male	Female
Varsity	58.00 (4.77) (N=14)	59.64 (4.52) (N=11)
Intramural	55.78 (6.20) (N=27)	49.73 (9.79) (N=11)

Note. Standard deviations are included in parentheses.

Table 9

Pearson r Correlation Coefficients for the Items of SOQGOAL

Item	8	12	16	20	24
4	-.174	.628***	.415**	.675***	.616***
8	-----	-.155	-.155	-.154	-.071
12		-----	.317*	.604***	.678***
16			-----	.559***	.303*
20				-----	.539***
24					-----

Note. Item numbers correspond to those of the SOQ.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 10

Alpha levels for SOO Goal Orientation Scale when Items are Deleted

Item	Alpha if item deleted
4	.4772
8	.8525
12	.4659
16	.5809
20	.4638
24	.4687

Note. The alpha value for SOQGOAL = .6170.

shows how the alpha value for SOQGOAL is affected by omitting each of the items comprising the scale.

Finally, a 2 x 2 (Group x Sex) ANOVA was calculated for SOQGOAL with the item omitted. This analysis generated a significant main effect, $F(1, 59) = 5.09$, $p < .05$, for Group with Varsity athletes scoring higher than Intramural athletes ($M=23.4$ and $M=21.5$, respectively). A post-hoc Tukey analysis indicates that Varsity athletes scored significantly higher than did Intramural athletes on SOQGOAL after item 8 was deleted. Table 11 shows a summary of the ANOVA and Table 12 contains the cell means.

Table 11

ANOVA Table for SOO Goal Orientation Scale (SOOGOAL) with
Item 8 Omitted

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Group	54.44	1	54.44	5.09*
Sex	23.44	1	23.55	2.19
Group x Sex	5.56	1	5.56	0.52
Error	630.50	59	10.69	

* $p < .05$.

Table 12

Cell Means for SOOGOAL with Item 8 Omitted

Group	Sex	
	Male	Female
Varsity	23.14 (1.92) (N=14)	23.73 (2.05) (N=11)
Intramural	20.96 (4.22) (N=27)	22.82 (2.79) (N=11)

Note. Standard deviations are included in parentheses.

Chapter IV

DISCUSSION

The primary purpose of this study was to determine if Varsity athletes and Intramural athletes differed with respect to Nicholls's (1984) concepts of Task Involvement and Ego Involvement as well as in their level of overall competitiveness. The following section discusses the results of the statistical analyses. The second section evaluates how well the present study has dealt with the issues previously outlined as being related to poor research in sport psychology. As well, suggestions for future research involving athletes and achievement motivation are considered.

Task Involvement

It was hypothesized that Varsity athletes would score higher than Intramural athletes on the Sport Orientation Questionnaire Goal Orientation Scale (SOQGOAL) and the Competitiveness Orientation Inventory (COI). These scales were used to measure Nicholls's concept of Task Involvement. Athletes who are high in Task Involvement focus on their own performance during training and competition rather than on the performances of other athletes or on the outcome of a competition. These scales produced mixed results for this hypothesis and thus, will be discussed individually.

The analyses indicated that there were no differences between Varsity athletes and Intramural athletes on the

SOQGOAL. In other words, the two groups did not differ with respect to Task Involvement as was predicted. However, as was mentioned in a previous section, this lack of significance might have been due to a single item ("I am not competitive when I try to achieve personal goals."). Further analyses with the item omitted did, in fact, suggest that the two groups differed with respect to Task Involvement, with Varsity athletes being more Task Involved than Intramural athletes. It is possible that because the majority of the participants responded to this item in a similar manner (i.e., disagreed with the item), the item may have eliminated the ability of the SOQGOAL to differentiate the two groups. The impact of this item in the present study may be substantial because the sample sizes of the two groups were relatively small; therefore, a larger difference between the scores of the two groups would have been required to reach statistical significance.

The question remains, however, as to why more than half of the participants, both Varsity and Intramural athletes, disagreed with the item. One possible explanation might be that the wording is such that the respondents felt it was measuring competitiveness. This feeling might have elicited a response of "disagree" or "strongly disagree" because these individuals were competitive athletes who conceivably would have liked to appear competitive. Endorsing this item would indicate that these athletes did not see themselves as

competitive. In other words, there might have been a social desirability effect, even though the participants were assured anonymity.

Additionally, based on the wording, it appears that the item is a measure of competitiveness and not goal orientation. It is possible that the participants responded to the "competitiveness" aspect rather than the "personal goals" aspect of the item that is so important for measuring Task Involvement. If this were the case, it would not be surprising that the item contaminated the results for SOQGOAL. Based on the findings that Item 8 does not correlate significantly with the other items comprising SOQGOAL and that the alpha value increases when the item is omitted, the investigator felt that exclusion of the item was warranted and that further analyses of the SOQ Goal Orientation scale is necessary to determine whether this item should remain included. As a result of this evidence, the item was excluded in the present study and analyses using the abbreviated scale produced a significant difference between Varsity and Intramural athletes. This difference was such that it provided support for the hypothesis that Varsity athletes would be more Task Involved than would be Intramural athletes.

The analyses of the COI also produced a significant difference between Varsity athletes and Intramural athletes. However, the results were in the opposite direction of what

was hypothesized. Because the COI is a measure of performance orientation (Vealey, 1986), it was predicted that Varsity athletes would score significantly higher than Intramural athletes. However, based on the COI, it appears that Intramural athletes in the present study were more Task Involved than were Varsity athletes.

It is possible that these results were due to the phrases comprising the COI. The phrases "played well" and "above average" might be descriptors that Intramural athletes would comfortably use to describe their performance. These terms might be satisfactory for Intramural athletes because they may be playing sports more for recreational purposes and performing well at these events might be perceived by these athletes as something extra. However, it is conceivable that Varsity athletes expect to "play well" on a regular basis and this might not always be satisfactory. A phrase such as "I played my absolute best" might be more meaningful for these elite athletes. In other words, because Varsity athletes expect to "play well" as a minimal personal standard, the outcome component (i.e., win versus lose) of the COI might have been of more interest to the Varsity athletes.

From the analyses and the previous discussion, it seems that the two scales of Task Involvement have produced conflicting results. It appears that SOQGOAL and COI are not measuring the same thing. Further support for the

notion that the two scales were not measuring the same construct in the same manner comes from the Pearson r correlation coefficient. There are significant negative correlations between SOQGOAL and COI when item 8 included in the scale and when it is excluded from the scale. It is interesting that it appears that the scales are negatively related as this finding contradicts the descriptions of the scales provided by the authors (Gill & Deeter, 1988; Vealey, 1986, 1988). The authors claim that higher scores are related to performance-focused achievement orientation, and for the purposes of the present study this has been equated with Task Involvement. Thus, one would expect the scales to be positively related. The finding that they are not positively related may be simply the result of the issues that have been mentioned for each of these scales or, alternatively, that the authors of the measures may have conceptualized the construct somewhat differently. Gill, Kelley, Martin, and Caruso (1991) note that while the SOQ and COI provide a "more comprehensive approach" (p. 268) to studying achievement orientation when used together, they state that the two measures "do not assess the same thing" (p. 278). Based on their sample, Gill et al. (1991) suggest that the SOQ and the COI do not measure the same construct. They write that the SOQ is a good measure of competitive orientation and assesses the concept as a multidimensional, sport-specific achievement construct. They indicate that

the COI, on the other hand, may be especially useful with elite athletes when used as a measure of relative performance orientation.

In a discussion of the norms that have been established, Vealey (1988) states that further research using the COI with elite athletes from different sports is needed. Based on Vealey's (1986) data, the Varsity athletes in the present study would score in a very low percentile. This inconsistency appears to support Vealey's claim and suggests that further research is required to establish the COI as a useful tool to measure performance orientation and, in turn Nicholls's (1984) concept of Task Involvement.

Ego Involvement

The second hypothesis stated for the present study was that Intramural athletes would score higher than Varsity athletes on SOQ Win Orientation (SOQWIN). Such a finding would suggest that Intramural athletes were more Ego Involved than were Varsity athletes and were, therefore, more focused on the outcome of a competition rather than on their individual performances. This hypothesis was not supported, however. There were no significant differences between Varsity and Intramural athletes.

One possible explanation for this finding might be that the sample of Varsity athletes was taken from an elite track and field team that has been very successful over the past several seasons on both a provincial level and on a national

level. Because of this success, these athletes may be more expectant to win at competitions than are other athletes from other clubs and teams who have not experienced the same degree of success. These expectations may have raised the importance of winning in these Varsity athletes. In other words, it may have resulted in these athletes becoming more Ego Involved.

Another explanation might be that Varsity athletes must surpass a predetermined criterion in order to compete at the national championships. These athletes must be aware of this external standard and train towards it. As a result of this awareness, the degree of Ego Involvement possessed by these athletes may be elevated.

A third possible explanation is that Varsity athletes approach training and competition differently. Walling, Duda, and Chi (1993) note that individuals will fluctuate with respect to their achievement orientation depending on the situation in which the athletes find themselves. Thus, it is conceivable that while competing, Varsity athletes are very much Task Involved; that is, they focus on their technique and their performance rather than on the anticipated outcome of the competition. However, their attitudes towards, and overall philosophy about, competing might be different when involved in activities other than athletic competition (e.g., when training, when completing questionnaires asking about their attitude towards

competing). Under conditions such as completing questionnaires, it is conceivable that winning is extremely important to these athletes and, as a result, scores on SOQWIN might be elevated to reflect heightened levels of Ego Involvement.

Competitiveness

The third hypothesis stated for the present investigation predicted that Varsity athletes would be more competitive than would be Intramural athletes; Varsity athletes would score higher than Intramural athletes on SOQ Competitiveness Scale (SOQCOMP).

The analyses showed that, as predicted, Varsity athletes scored significantly higher on SOQCOMP than did Intramural athletes. This finding is similar to existing literature (Balazs & Nickerson, 1976; Gravelle, Searle, & St. Jean, 1982; Watson, 1986) that suggests that the degree of achievement motivation is directly related to athletic ability and increases with level of athletic activity. The present study seems to suggest that competitiveness is a personality trait that helps an athlete tolerate and persevere through the extensive training required to reach elite standards of performance. This seems especially true for females as female Varsity athletes scored on average ten points higher on SOQCOMP than did female Intramural athletes.

One possible explanation for the difference of scores

between female Varsity athletes and female Intramural athletes might be that the latter participate primarily for recreational and fitness purposes. It is conceivable, then, that this subgroup would place the least importance on competition, performance, and winning and, as a result, would score lowest on the SOQCOMP.

An alternate explanation is that Female Intramural athletes have a different approach to athletics than do female Varsity athletes. It is conceivable that females participating in Intramural events are involved because of a need for affiliation rather than a need for achievement. That is, for these females, athletic competition is not viewed as a domain to express achievement motivation. This is in no way implying that they have low achievement motivation, but simply that this group of females choose to express it in domains other than athletics. As a result, scores on a measure of sport-specific achievement motivation, such as the SOQCOMP, would be expectedly lower for female Intramural athletes. Female athletes at an elite level of competition, for example the Varsity track team, would be much more likely to score high on a measure like the SOQCOMP.

The present study seems to suggest that, unlike females, who appear to have different attitudes towards athletic competition depending on the level at which they participate, males do not seem to possess opposing

viewpoints regarding sport competition. Males' scores may not have varied across groups simply because they experience athletics as competitive and strive to excel and/or to win regardless of the level of participation. Thus, their scores on SOQCOMP would not be expected to differ. Similar explanations have been offered in previous research (e.g., Dubois, 1990; Gill, 1988, 1992).

Dubois (1990) notes that children aged 8 to 10 years had different attitudes towards winning. Dubois was interested in how participation in sports influenced the attitudes of 49 females and 61 males involved in co-ed soccer. The young athletes' attitudes were measured before and after the season. Dubois reports that at the beginning of the season, there was no difference between the two groups with respect to emphasis placed on winning. However, Dubois notes that this had changed by the end of the season and boys now placed significantly more importance on winning than did girls. Based on this investigation, it seems that even young males begin to stress the importance of winning.

Gill (1988) compared males and females who participated in competitive sport, noncompetitive sport, and nonsport activities using the SOQ and the Work and Family Orientation Questionnaire (WOFO) in addition to other measures. The SOQ is a sport-specific measure of achievement motivation while the WOFO is a measure of general achievement motivation. Gill brings special attention to the finding that while

males and females differed with respect to a sport-specific measure of achievement motivation, they scored similarly on the measure of general achievement motivation.

Gill (1992) summarizes some research that has reported gender differences in athletes. She concludes that differences in competitive orientation between males and females in sport do not reflect gender differences for general achievement motivation.

Support for Nicholls's (1984) Theory

The present investigation attempted to find support for Nicholls's (1984) theory of achievement motivation in an athletic domain. Nicholls suggests that achievement motivation can be of two orientations - Task Involvement and Ego Involvement. A person who is Task Involved has a tendency to focus on personal performances to evaluate one's ability and sense of competency. An Ego Involved individual tends to focus on the performance of another athlete or some other external criterion. Thus, the outcome of the competition is primarily important for the Ego Involved athlete with respect to determining one's ability and competency.

Jackson and Roberts (1992) utilized this theoretical position in their study of peak performance of 200 collegiate athletes. They reported that athletes who are Task Involved tended to achieve their peak performance. Additionally, they reported that athletes' worst

performances were typically associated with an Ego Involved approach to competition. The present study used similar reasoning and predicted that a Task Involved approach to competition would be more conducive to attaining elite-level performances. It was, therefore, predicted that Varsity athletes who have participated at a national competition would be more Task Involved than Intramural athletes participating in Campus recreational activities. Finally, one would expect the Intramural athletes to be more Ego Involved than the Varsity athletes.

The present investigation provided mixed support for Nicholls's (1984) theory. The concept of Task Involvement was not supported using the COI, which produced a result that was the opposite of what had been predicted. On the other hand, with the deletion of an apparently poor item, the SOQ provided support for the hypothesis that Varsity athletes were more Task Involved than Intramural athletes.

In addition to measuring Task Involvement, the SOQ recorded participants' degree of Ego Involvement. Again Nicholls's position was not supported by the present study. No differences were found between Varsity athletes and Intramural athletes with respect to Ego Involvement.

It appears that with the sample and measures that were utilized in the present study, little support was obtained for applying Nicholls's (1984) theory of achievement motivation within a university-level athletic context.

Based on the findings of the present investigation, it appears that when dealing with elite track and field athletes the key achievement orientation is Task Involvement. Perhaps these athletes possess a somewhat elevated level of Ego Involvement simply because of the nature of their sport. Thus, a Task Involved orientation that is higher than average might be required to overcome this heightened Ego Involved approach and aid track and field athletes to attain elite performances. Thus, more research is required to determine the degree to which Nicholls's (1984) theory applies to elite track and field athletes, as well as to determine its utility with elite athletes from other sports.

Limitations of the Present Study and Implications for Future Research

The present investigation was designed to avoid some of the problems that have been described as being typical of sport psychology research (e.g., Furnham, 1990; Gill, 1986). Briefly, these issues include poor sampling of participants, poor measurement of variables, and failure to effectively apply an appropriate theory. Each of these issues will be discussed with respect to the present investigation. Finally, other limitations of the study will be addressed.

Sampling. The present study used two groups of athletes that differed with respect to level of athletic participation. Specifically, Varsity track and field

athletes and Intramural volleyball and basketball athletes were the focus of comparison. These athletes were classified as elite and nonelite, respectively.

One problem with the sampling procedures involves the sports that were compared. Varsity track and field athletes were chosen in an attempt to minimize the possibility of athletes having different and conflicting team and individual goals (Jackson & Roberts, 1992). However, the athletes comprising the Intramural group were participating in team events (i.e., co-ed volleyball, men's volleyball, men's basketball). Based on the findings of the present study, it is conceivable that there is a difference between the achievement orientation of athletes who are involved in individual competitions and those who are involved in team sports. Future research might focus on comparing different levels of ability within the same sport (e.g., Varsity track and field versus Intramural track and field) rather than across sports.

A second issue involving sampling is the relatively small sample sizes utilized. The present investigation compared samples of Varsity athletes ($N=25$) and Intramural athletes ($N=38$). Not only are these unequal, but the relative small size would require a greater difference between the scores on the scales to reach statistical significance. Future research might consider increasing the sample sizes.

Measurement of Variables. The present investigation employed two relatively new measures - the Sport Orientation Questionnaire and the Competitiveness Orientation Inventory. These measures were chosen because they were developed with the idea that achievement motivation could be of two orientations - performance-focused and outcome-focused. These constructs were linked directly to Nicholls's (1984) concepts of Task and Ego Involvement (Duda, 1989). As well, existing literature (i.e., Gill, Kelley, Martin, & Caruso, 1991; Martin & Gill, 1991) supports using the measures simultaneously.

The present study, however, raises some questions concerning these measures. First, the Goal Orientation Scale of the SOQ appears, based on current findings, to contain an item that does not fit well within this scale. Future research might do further item analyses to determine whether this item does in fact differ from the other items in the scale.

Wording issues have been previously discussed concerning the COI. Additionally, Vealey (1988) notes that more research is required to establish accurate norms for the COI with respect to elite athletes in different sports. Future undertakings might consider providing such data.

Theory. Much of sport psychology has been criticized for not utilizing theory-driven research designs. The present study applied Nicholls's (1984) theory of

achievement motivation. The hypotheses were directly generated from this perspective and scales were chosen to measure the concepts proposed by Nicholls. However, the present investigation failed to replicate findings that support applying this approach in an athletic environment. Future research might address some of the issues that have been presented previously involving sampling and measurement. As well, future projects might focus on whether this perspective might be sport-specific or if it more effectively explains athletic performance in individual sports (e.g., tennis, badminton, and track and field) as opposed to team sports (e.g., hockey, basketball, and volleyball).

Appendix A

Questionnaire Package

This survey includes two copies of a consent form and several questionnaires. The first copy of the consent form is to be read, signed if you wish to participate in the study, and returned to the investigator with the completed questionnaire. The second copy is for your own records and thus should be removed from the package before you hand it to the experimenter.

Please respond honestly to the items and answering as many questions as possible would be appreciated. Your responses will be completely confidential.

Further instructions can be found on each survey.

Consent Form

I, _____ (please print), hereby understand and consent to the following:

I am participating in a study that is investigating achievement motivation and performance in an athletic environment. This study is a masters thesis being conducted by Dion Goodland, a graduate student in the Department of Psychology at the University of Windsor. The study is being supervised by Dr. Ron Frisch. In this study I will be completing a series of questionnaires that focus on achievement motivation. The purpose of the study is to consider the relationship between an athlete's personality and performance.

I am aware that my participation is completely voluntary. I have the right to withdraw from participation at any time without explanation or penalty, and I may refrain from answering any questions. I may ask questions at any time during my participation, and Dion Goodland, the principal investigator, will be available after I am finished for any further questions, comments, or discussion. Confidentiality regarding my responses will be ensured by not having my name or any other identifying information appear on the questionnaires. The data obtained through my participation may, in the future, be used for publication purposes.

The questionnaire package should take approximately fifteen minutes to complete. A summary of the results can be obtained from Dion Goodland in about 10 months.

This procedure and consent form have been reviewed and accepted by the University of Windsor's Department of Psychology Ethics Committee. Concerns may be directed to Dr. James Porter, Psychology Ethics Committee (253-4232 x7012). I have received a copy of this form for my records.

For information contact:
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Windsor, Ontario
N9B 3P4
(519) 253-4232 (Psychology Dept.)

signature

OR

date

Ron Frisch, Ph.D., C.Psych.
Department of Psychology
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OR

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Sport Orientation Questionnaire- Form B
(Gill & Deeter, 1988)

The following statements describe reactions to sport situations. We want to know how you usually feel about sports and competition. Read each statement and circle the letter that indicates how much you agree or disagree with each statement on the scale: A,B,C,D, or E. There are no right or wrong answers; simply answer as you honestly feel. Do not spend too much time on any one statement. Remember, choose the letter which describes how you usually feel about sports and competition.

A= Strongly Agree
B= Slightly Agree
C= Neither Agree Nor Disagree
D= Slightly Disagree
E= Strongly Disagree

- | | | | | | |
|--|---|---|---|---|---|
| 1. I am a determined competitor. | A | B | C | D | E |
| 2. Winning is important. | A | B | C | D | E |
| 3. I am a competitive person. | A | B | C | D | E |
| 4. I set goals for myself when I compete. | A | B | C | D | E |
| 5. I try my hardest to win. | A | B | C | D | E |
| 6. Scoring more points than my opponent is very important to me. | A | B | C | D | E |
| 7. I look forward to competing. | A | B | C | D | E |
| 8. I am not competitive when I try to achieve personal goals. | A | B | C | D | E |
| 9. I enjoy competing against others. | A | B | C | D | E |
| 10. I hate to lose. | A | B | C | D | E |
| 11. I thrive on competition. | A | B | C | D | E |
| 12. I try hardest when I have a specific goal. | A | B | C | D | E |
| 13. My goal is to be the best athlete possible. | A | B | C | D | E |
| 14. The only time I am satisfied is when I win. | A | B | C | D | E |

- | | | | | | |
|--|---|---|---|---|---|
| 15. I want to be successful in sports. | A | B | C | D | E |
| 16. Performing to the best of my ability
is very important to me. | A | B | C | D | E |
| 17. I work hard to be successful in
sports. | A | B | C | D | E |
| 18. Losing upsets me. | A | B | C | D | E |
| 19. The best test of my ability is
competing against others. | A | B | C | D | E |
| 20. Reaching personal performance goals
is very important to me. | A | B | C | D | E |
| 21. I look forward to the opportunity to
test my skills in competition. | A | B | C | D | E |
| 22. I have the most fun when I win. | A | B | C | D | E |
| 23. I perform my best when I am
competing against an opponent. | A | B | C | D | E |
| 24. The best way to determine my
ability is to set a goal and try to
reach it. | A | B | C | D | E |
| 25. I want to be the best every time I
compete. | A | B | C | D | E |

Please indicate the following:

Male _____ Female _____

Age _____

Competitive Orientation Inventory
(Vealey, 1986)

When you compete in sport, you focus on two major goals. These goals are:

1. To perform well
2. To win

Think about how satisfied you are when you perform well and lose. Think about how satisfied you are when you perform poorly and win.

Below is a matrix containing 16 boxes. Each box represents a situation in which you either win or lose and either perform well or poorly.

Write a number from 0 to 10 in each box below.

Select your numbers for each box based on the scale below:

0	1	2	3	4	5	6	7	8	9	10
very dissatisfied										very satisfied
in this situation										in this situation

* There are no right or wrong answers- we are interested in how you feel.

	EASY WIN	CLOSE WIN	CLOSE LOSS	BIG LOSS
PLAYED WELL				
ABOVE AVERAGE				
BELOW AVERAGE				
PLAYED POORLY				

THANK YOU FOR YOUR PARTICIPATION !

Appendix B

List of Items Comprising the Scales of the Sport Orientation
Questionnaire

The SOQ scales and their corresponding items are listed below:

Competitiveness (SOQCOMP): 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21,
23, 25;

Win Orientation (SOQWIN): 2, 6, 10, 14, 18, 22;

Goal Orientation (SOQGOAL): 4, 8, 12, 16, 20, 24.

Each item is scored from 1 to 5, with A = 1, B = 2, C = 3, D = 4, and E = 5. To get the total score for each scale, sum the scores for each of the items contained in the scale.

Appendix C

Scoring Procedure for the COI

Vealey (1988) indicates that the following procedure can be modified be used with several computer statistical programs (e.g., SAS, SPSS-X). The scores can be calculated without the assistance of one of these packages but will be very time-consuming.

The following steps are taken from Vealey (1988):

1. Number each cell from 1 to 16, with the cells in Row 1 numbered 1, 2, 3, and 4. The cells in Row 2 are numbered 5, 6, 7, and 8. The cells of Row 3 and Row 4 are numbered 9, 10, 11, and 12, and 13, 14, 15, and 16, respectively.

2. Compute the performance score.

a. Sum the values for the cells in each row.

$$R1 = 1 + 2 + 3 + 4$$

$$R2 = 5 + 6 + 7 + 8$$

$$R3 = 9 + 10 + 11 + 12$$

$$R4 = 13 + 14 + 15 + 16$$

b. Find the sum of squares using the following equation:

$$\begin{aligned} \text{PERSS} = & ((R1 * R1)/4 + (R2 * R2)/4 + (R3 * R3)/4 + \\ & (R4 * R4)/4 - (((R1 + R2 + R3 + R4) * (R1 + R2 + \\ & R3 + R4))/16) \end{aligned}$$

c. Compute the total sums of squares.

$$\begin{aligned} \text{TOTSS} = & ((1*1)+(2*2)+(3*3)+(4*4)+(5*5)+(6*6)+(7*7)+(8*8)+ \\ & (9*9)+(10*10)+(11*11)+(12*12)+(13*13)+(14*14)+(15*15)+ \\ & (16*16)) - (((R1+R2+R3+R4)*(R1+R2+R3+R4))/16) \text{ (cont.)} \end{aligned}$$

d. Divide the performance sum of squares by total sum of squares to get COI-PER.

$$\text{COI-PER} = \text{PERSS}/\text{TOTSS}$$

3. Compute the outcome score.

a. Sum the values of the cells in each column.

$$C1 = 1 + 5 + 9 + 13$$

$$C2 = 2 + 6 + 10 + 14$$

$$C3 = 3 + 7 + 11 + 15$$

$$C4 = 4 + 8 + 12 + 16$$

b. Compute the sum of squares using the following equation:

$$\begin{aligned} \text{OUTSS} = & ((C1 * C1)/4 + (C2 * C2)/4 + (C3 * C3)/4 + \\ & (C4 * C4)/4 - (((C1 + C2 + C3 + C4) * (C1 + C2 + \\ & C3 + C4))/16) \end{aligned}$$

c. Divide the outcome sum of squares by total sum of squares to get COI-OUT.

$$\text{COI-OUT} = \text{OUTSS}/\text{TOTSS}$$

4. Compute the composite competitive orientation score.

a. Find the inverse of the COI-OUT.

$$\text{INVERSE} = 1 - \text{COI-OUT}$$

b. Find the COI score as the average of COI-PER and the inverse of COI-OUT.

$$\text{COI} = (\text{COI-PER} + \text{INVERSE})/2$$

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